

**In the Claims**

Please amend the claims as follows:

1. (Currently Amended) An optical element operable to compensate for dispersion associated with a transmission link, the optical element comprising:

an input port operable to receive an optical signal from at least one transmission link, the optical signal comprising an one or more optical signal wavelengths, wavelength, the at least one transmission link comprising a distributed Raman amplifier coupled to the input port and having a length, an optical loss, a dispersion, a sign of dispersion, and a cut-off wavelength;

a ~~distributed Raman gain fiber coupled to the input port and medium having an optical loss and connected to the input port, the distributed Raman gain medium~~ operable to amplify the optical signal and to compensate for dispersion associated with the at least one transmission link, wherein the ~~distributed Raman gain fiber medium~~ comprises a dispersion-length product that is substantially approximately equal in magnitude to a dispersion-length product of the at least one transmission link and wherein the ~~distributed Raman gain fiber medium~~ comprises a sign of dispersion that is opposite a sign of dispersion associated with the at least one transmission link;

~~a pump source configured to be coupled to the distributed Raman gain medium, the pump source operable to generate a pump signal to pump the distributed Raman gain medium to compensate for the optical loss of the transmission link and the optical loss of the distributed Raman gain medium, wherein the pump source generates the pump signal at a pumping level sufficiently high so that the optical signal experiences a net gain; and~~

a first pump source coupled to the Raman gain fiber and operable to generate a first pump signal that traverses the Raman gain fiber in a first direction; and

a second pump source coupled to the Raman gain fiber and operable to generate a second pump signal that traverses the Raman gain fiber in a direction counter to the first direction, wherein the first pump signal and the second pump signal operate to compensate for the optical loss of the transmission link and an optical loss of the Raman gain fiber; and

an output port for outputting the amplified optical signal.

2. (Cancelled)

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[Signature]